

We claim:

1. A method of increasing expression of GLUT4 in a subject comprising administering to the subject a GDF-8 inhibitor.

5

2. A method of increasing insulin sensitivity and glucose uptake by cells in a subject comprising administering to the subject a GDF-8 inhibitor.

3. A method of treating diabetes in a subject comprising administering to 10 the subject a GDF-8 inhibitor.

4. The method of any one of claims 1-3, wherein the GDF-8 inhibitor is an antibody or antibody fragment.

15 5. The method of any one of claims 1-3, wherein the GDF-8 inhibitor is selected from the group consisting of a peptide fragment of GDF-8, a dominant-negative mutant of GDF-8, a GDF-8 receptor antagonist, a non-GDF-8 peptide, an antisense nucleic acid and a ribozyme.

20 6. The method of any one of claims 1-3, wherein the GDF-8 inhibitor is derived from mature GDF-8 protein.

7. The method of any one of claims 1-3, wherein the GDF-8 inhibitor is derived from the Pro domain of a GDF-8 protein.

25

8. The method of claim 2, wherein said insulin sensitivity and glucose uptake is increased by modulating the expression of a hexose transporter selected from the group consisting of GLUT4 and GLUT1

30

9. The method of claim 2, wherein the cell is a muscle cell or a precursor thereof.

10. The method of claim 2, wherein the cell is an adipocyte or a precursor thereof.

5 11. The method of claim 3, wherein the subject is suffering from type II diabetes.